

WHAT IS CLAIMED IS::

1. An anamorphic prism typically adapted to compress or expand the incident light beam in a particular direction of cross section of the light beam before letting it exit therefrom, said anamorphic prism comprising:

a first prism made of a first light transmitting material;

a second prism made of a second light transmitting material;

said first prism and said second prism being bonded together along predetermined respective planes thereof;

the light beam entering said first prism being expanded or compressed in a particular direction of cross section of the beam with a predetermined magnification; and

the expanded or compressed light beam being let to exit from said second prism and proceed in a direction substantially same as the proceeding direction of the incident light beam entering said first prism.

2. The anamorphic prism according to claim 1, wherein the magnification of conversion at the cross section of the incoming light beam along the junction plane of the first prism and the second prism is greater than the magnification of conversion at the cross section of the incoming light beam along the refraction plane of the first prism or the second prism different from said junction plane.

3. The anamorphic prism according to claim 1, wherein,

if the refractive index of the first light transmitting material and that of the second light transmitting material relative to a predetermined wavelength is N_1 and N_2 respectively and the change in the refractive index of the first vitreous material and the change in the refractive index of the second vitreous material relative to the change in the wavelength are ΔN_1 and ΔN_2 respectively, the requirement of the formula below is satisfied.

$$0.7 \leq (\Delta N_2 / \Delta N_1) \times (N_1 / N_2)^2 \leq 1.4$$

4. The anamorphic prism according to claim 1, wherein a reflection plane is provided on the plane through which the light beam exits said second prism and the proceeding direction of the outgoing light beam is made to be substantially perpendicular to the proceeding direction of the outgoing light beam entering the first prism by said reflection plane.

5. An optical head adapted to direct the light beam from a light source to an optical recording medium, said optical head comprising:

an anamorphic prism for converting the light beam emitted from the light source in a particular direction of cross section of the light beam;

an objective lens for converging the light beam emitted from said anamorphic prism and irradiating an optical recording medium with the light beam; and

an photodetector for receiving the light beam reflected by and returning from said optical recording medium;

said anamorphic prism having:
a first prism made of a first light transmitting material; and
a second prism made of a second light transmitting material;
said first prism and said second prism being bonded together along
predetermined respective planes thereof;

the light beam entering said first prism being expanded or compressed
in a particular direction of cross section of the light beam with a predetermined
magnification; and

the expanded or compressed light beam being let to exit from said second
prism and proceed in a direction substantially same as the proceeding direction
of the incident light beam entering said first prism.

6. The optical head according to claim 5, wherein said anamorphic prism
is adapted to expand or compress the light beam emitted from said light source
with a predetermined magnification in a direction perpendicular to the main
surface of the optical recording medium.

7. The optical head according to claim 5, wherein the components other
than said anamorphic prism are arranged at respective positions that makes the
offset of the incoming light beam and that of the outgoing light beam from the
optical axis are substantially equal and allows to be used in combination with
a plurality of anamorphic prisms showing different respective magnifications
of conversion relative to the incoming light beam.

8. The optical head according to claim 5, wherein said anamorphic prism converts the light beam emitted from said light source with an magnification of conversion not smaller than 1.4 times.

9. An optical recording/reproduction device for optically recording an information signal on and reproducing an information signal from the signal recording surface of an optical recording medium, said device comprising:

an optical head including:

a light source;

an anamorphic prism for converting the light beam emitted from the light source in a particular direction of cross section of the light beam;

an objective lens for converging the light beam emitted from said anamorphic prism and irradiating an optical recording medium with the light beam; and

an photodetector for receiving the light beam reflected by and returning from said optical recording medium;

a signal processing circuit for processing the detection signal from said optical head; and

a control means for controlling the operation of said optical head according to the output of said signal processing circuit;

said anamorphic prism having:

a first prism made of a first light transmitting material; and

a second prism made of a second light transmitting material;
said first prism and said second prism being bonded together along
predetermined respective planes thereof;

the light beam entering said first prism being expanded or compressed
in a particular direction of cross section of the beam with a predetermined
magnification;

the expanded or compressed light beam being let to exit from said second
prism and proceed in a direction substantially same as the proceeding direction
of the incident light beam entering said first prism.